

From: [Ryerson.Teddy](#)
To: [Horst Greczmiel](#) (b) (6)
Cc: [Blumenfeld, Jared](#); [Martynowicz, Trina](#)
Subject: Latest draft Rosemont Itinerary
Date: Friday, January 17, 2014 3:57:02 PM
Attachments: [DRAFT Proposed Itinerary for Rosemont Visit 011714 v1.docx](#)

Dear Horst – per our conversation, here is the latest draft itinerary for the Rosemont trip in late January. We can talk more about this, and also help you calendar your flights etc, early next week. Have a fabulous 3 day weekend!

From: Martynowicz, Trina
Sent: Friday, January 17, 2014 2:16 PM
To: Ryerson.Teddy
Subject: Latest Rosemont Itinerary

Here's the latest itinerary.

Trina Martynowicz
Special Assistant to the Regional Administrator
U.S. EPA Region 9
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San Francisco, CA 94105
415.972.3474
Martynowicz.Trina@epa.gov

DRAFT Proposed Itinerary for Rosemont Copper Mine Site Visit – January 28th to 29th**Participants** *(confirmed unless otherwise noted)*

EPA Region 9 Jared Blumenfeld Jane Diamond Rob Leidy Carter Jessop	Title Regional Administrator Director, Office of Water Wetlands Office Environmental Review Office
EPA Headquarters Ken Kopocis Susan Bromm	OW Director, OECA OFA
CEQ Horst Greczmiel	Associate Director, NEPA Oversight
USACE- Los Angeles District Colonel Colloton David Castanon	Commander and District Engineer Chief, Regulatory Division
Other Federal partners invited: USFS- TBD BLM- TBD NPS- TBD	
State/Local Government Officials ADEQ TBD U.S. Congressional TBD County officials TBD <i>Others TBD</i>	<i>Henry Darwin not available but R9 WD staff working with Mike Fulton, Water Director</i>
Non Governmental Officials <i>Others TBD</i>	

Tentative Agenda: Tuesday, January 28th

10 am Arrive at SFO

11 am – 2 pm R9 staff fly direct depart SFO 11am, land Tucson 2pm

3 – 5 pm Meeting with TON Tribe
Who: TON Tribe, EPA R9 and Headquarters, Corps and CEQ's Horst Greczmiel (other federal agencies not included)
Location: TBD

6 – 8 pm Dinner in Tucson
Who: EPA, *(potentially with NGOs)*
Location: TBD

Or EPA Region 9 Jared and Army Corps Col. Colloton individual meeting over dinner

Overnight **Hotel**
Location: TBD

Wednesday, January 29th

8:00 am – 9:45 pm **Empire Ranch/Tour of Las Cienegas National Conservation Area (LCNCA)**
Who: EPA R9 and Headquarters, BLM, CEQ's Horst, non-governmental officials
Location: *Address TBD*

10:45 – 12:00 pm **Meeting with Corps and Rosemont Mine to Tour of Sonoita Creek Mitigation Site**
Who: EPA R9 and Headquarters, Corps, BLM, CEQ's Horst, Mine staff
Location: Sonoita Creek Mitigation Site

12:00 – 12:45 pm **Group lunch**
Location: TBD

EPA and Corps split into two groups:

	<u>EPA Delegation</u>	<u>Corps and Mine Staff</u>
1:45 – 2:45pm	Tour Pantano Dam site Who: Jared and EPA staff, elected officials, including Pima County Location: Pantano Dam Site	Tour proposed mine site Who: EPA's Jane Diamond, Corps, Horst, Mine staff Location: Proposed mine site
2:45 – 4:15pm	Meeting with elected officials Who: Jared and EPA staff, elected officials, Pima County Location: Colossal Cave Road	

4:15 – 4:50pm **EPA delegation conclude tour; drive to Tucson Airport (35 min drive)**

6 – 8:30 pm **EPA R9 staff fly from Tucson to LAX to SFO (if meetings continue beyond 4pm, then staff would need to stay overnight and fly out Thursday the 30th)**

Jared can depart the site at 1pm to catch the last direct flight of the day, which depart Tucson 3 pm, lands in SFO at 4:15 pm or

From: [Goforth, Kathleen](#)
To: [Greczmiel, Horst](#)
Cc: [Blumenfeld, Jared](#); [Diamond, Jane](#); [Scott, Jeff](#); [Kopocis, Ken](#); [Bromm, Susan](#); [Rader, Cliff](#); [Brush, Jason](#); [Jessop, Carter](#); [Herrera, Angeles](#); [Hanf, Lisa](#); [Johnson, Kathleen](#); [Leidy, Robert](#); [Evans, David](#); [Goldmann, Elizabeth](#)
Subject: RE: Next Steps and Agency views on Mitigation - Deliberative - pre-decisional RE: Rosemont Mine - Deferral?
Date: Thursday, January 09, 2014 9:13:22 AM
Attachments: [2013_12_30_PimaCountyRosemontMitigationLettertoCorps.pdf](#)

Horst –

The views that we previously submitted (in your message below) continue to reflect EPA's perspective on the waters of the U.S. impacts of the proposed Rosemont Mine project and the deficiencies of the mitigation concepts proposed to date. As noted in those views, the proposed mine project would eliminate a largely undisturbed network of 18 linear miles of desert streams through direct fill, and cause groundwater drawdown impacting surface waters across approximately 64,000 acres of the Cienega Creek watershed. These secondary 404 impacts will result in the loss of hundreds of additional acres of riparian vegetation and the drying of perennial streams, according to the EIS.

EPA believes a watershed approach to mitigation is both consistent with long-held Corps/EPA policy and regulations, and is necessary given the scope of impacts. Conceptually, what would be necessary to offset the impacts as we understand them would be a comprehensive, regional preservation program bringing priority conservation lands together that include at least as many waters of the U.S. stream miles (distributed similarly on the landscape—not lumped together in one small parcel) preserved as will be impacted. Preservation on this 1:1 basis would be necessary, but not sufficient under the regulations, unless waters of the U.S. can be functionally enhanced on the preservation lands (in ways that can be measured and verified). In the absence of functional enhancement, the stream miles preserved-to-impacted ratio would need to be significantly greater than 1:1. To the extent practicable, the mitigation should be in the Cienega Creek watershed to truly offset impacts.

Attached is a copy of the 12/30/13 letter from the Pima County Administrator to Colonel Colloton, which reinforces many of these views. The County controls the Pantano Dam parcel, which has been the focus of most mitigation credit discussions to date. Like EPA, the County's letter emphasizes the inadequacy of small, isolated parcels to serve as compensatory mitigation for destruction of an "entire, intact, contiguous . . . ecosystem," and suggests that many priority conservation parcels are potentially available and have not been evaluated.

Although the County lists measures necessary for mitigation activities at Pantano to be possible (e.g., find actual water, secure the rights to it, provide conveyance, etc), EPA agrees that Pantano alone would be insufficient as a mitigation strategy. This 2-mile stretch of stream habitat would fail to replace the ecosystem services of the 18 miles being directly eliminated, and would leave mitigation for the significant secondary impacts of the discharges unaddressed.

Best wishes for the new year –
-Kathy

From: Greczmiel, Horst [mailto:Horst_Greczmiel@ceq.eop.gov]
Sent: Monday, December 23, 2013 7:46 AM
To: 'Cal Joyner (cjoyner@fs.fed.us)'; 'Jim Upchurch (jupchurch01@fs.fed.us)'; Kopocis, Ken; Blumenfeld,

Jared; Bromm, Susan; Rader, Cliff; Goforth, Kathleen; 'Ann Acheson - CEQ (aacheson@fs.fed.us)'; 'Joe Carbone (jcarbone@fs.fed.us)'; 'Robert Bonnie (robert.bonnie@osec.usda.gov)'; 'Meryl Harrell (meryl.harrell@osec.usda.gov)'; 'Blaine, Marjorie E SPL'; 'Castanon, David J SPL'; (b) (6); [REDACTED].mil; 'Dave Sire (david_sire@ios.doi.gov)'; 'Deborah Rawhouser (drawhous@blm.gov)'; 'Edwin Roberson'; Ann Acheson - CEQ (aacheson@fs.fed.us); Thomas_Flanagan@nps.gov; David Cottingham (David_Cottingham@fws.gov); Larry Bright (Larry_bright@fws.gov)

Cc: Guzy, Gary S.; Boots, Michael J.; Patel, Manisha

Subject: Next Steps and Agency views on Mitigation - Deliberative - pre-decisional RE: Rosemont Mine - Deferral?

Importance: High

CEQ Consultation/Referral

[REDACTED]

[REDACTED]

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CEQ Consultation/Referral

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[REDACTED]

CEQ Consultation/Referral

[REDACTED]

[REDACTED]

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Thank you all and have a safe, healthy, and joy-filled holiday!

Horst Greczmiel
Associate Director for NEPA Oversight
Council on Environmental Quality

(b) (6)



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COUNTY ADMINISTRATOR'S OFFICE

PIMA COUNTY GOVERNMENTAL CENTER
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C.H. HUCKELBERRY
County Administrator

December 30, 2013

Colonel Kim Colloton
District, Engineer, Los Angeles District
US Army Corps of Engineers
P. O. Box 532711
Los Angeles, California 90053-2325

**Re: US Environmental Protection Agency Region IX November, 2013 Letter Regarding
Its Analysis of the Updated Draft Clean Water Act Section 404 Compensatory
Mitigation Proposal for Rosemont Mine, Pima County, Arizona and the December
13, 2013 Rosemont Copper Letter Regarding the Same Subject**

Dear Colonel Colloton:

Pima County and the Pima County Regional Flood Control District (RFCD) would like to take this opportunity to provide you with our position regarding the Rosemont Copper proposal for mitigating adverse impacts on Waters of the United States (WUS), ephemeral streams and riparian areas by their mining proposal. The proposed impacts are significant and substantial within the Cienega Basin Watershed, a watershed the County has attempted to conserve over the last three decades. Impacts to the watershed will come from the actual mining activities that will result in the direct impact to 5,431 acres of land that have inherent environment functions and ecosystem services. Indirect, offsite impacts from the mining activities include diversion of both surface water flows (impacting downstream resources) and groundwater subflows intercepted by the mining activities supporting wetlands and functions of even ephemeral WUS).¹

¹Groundwater Model of the Santa Rita Rosemont Project Site Report, Pima County Regional Flood Control District, April 28, 2008; Clean Water Act Section 404 Comments, Pima County 2012; Draft Environmental Impact Statement (DEIS) Comments, Pima County, 2011; Preliminary Administrative Final Environmental Impact Statement (PAFEIS) Comments, Pima County, August 14, 2013; Final Environmental Impact Statement (FEIS), US Forest Service, December 2013).

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Pima County and the RFCD Have Heavily Invested in Protecting the Cienega Basin Watershed

The County's concerns about the impacts from the Rosemont project arise from the uniqueness of the Cienega Basin Watershed and our efforts to protect it as a treasured natural resource. The uniqueness of the watershed comes from the fact that it supports large, low-elevation groundwater-dependent ecosystems in a county where depletion of groundwater has already caused the loss of the largest and most significant stream in southern Arizona, the Santa Cruz River. The Cienega Basin Watershed is remarkable for being nearly undeveloped and free of the exotic aquatic species that characterize the San Pedro River and other streams in southern Arizona. This watershed provides valuable habitat for 11 species that are either federally listed or proposed for listing. The scale of the impacts from the Rosemont mine and its position in the headwaters of the watershed threaten the most ecologically intact remnants of the Cienega Basin Watershed.

Community efforts to protect the watershed began 40 years ago, when the Pima County Board of Supervisors was first confronted with a proposal for a new satellite city (Attachment 1). The community debate about the proposal centered largely on water issues.

Recognizing the longstanding interest of citizens in Pima and Santa Cruz Counties for protecting natural and scenic values as well as water resources, Congress designated a significant portion of the watershed as the Las Cienegas National Conservation Area.

The County's acquisitions along the Cienega Creek began in 1980 with the purchase of what is now called the Cienega Creek Natural Preserve from Horizon Land Company. These initial acquisitions have been followed with the acquisition and development of the Cienega Valley Empire Ranch Reserve, including open space acquisitions of the Bar-V Ranch, Sands Ranch, Clyne Ranch, and Empirita Ranch and the expansion of Colossal Cave Mountain Park and the Cienega Creek Natural Preserve and other related acquisitions (Attachment 2). All of these acquisitions have been to protect the watershed basin and these unique groundwater-based stream ecosystems that provide a myriad of benefits to the natural and cultural fabric of our County.²

² Protecting Our Land, Water and Heritage, Pima County's Voter Supported Conservation Efforts, February 2011; Pima County DEIS comments, 2012.

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These open space acquisitions complement the protection of this watershed and are reported to federal authorities through our stormwater management [Clean Water Act (CWA) Section 402] program. Our efforts to monitor the water quality of Cienega Creek and Davidson Canyon began in 1987 with water quality sampling, leading to an interagency petition in 1990 to protect Cienega Creek within the Natural Preserve under the State of Arizona's Outstanding Waters Program. This program imposes anti-degradation standards under State water quality rules. That petition was granted, along with the Pima Association of Government's 2005 request to designate Davidson Canyon as an Outstanding Arizona Water pursuant to R18-11-112 of the Arizona Administrative Code. The designation of Davidson Canyon was sought to protect the high-quality water that Davidson provides to Cienega Creek, and ultimately Tucson, via springs and groundwater underflows. Today, the Pima Association of Governments' monitors a host of water-related indicators, including shallow groundwater and quarterly observations of surface flows along Davidson Canyon. As a result of these efforts and the habitat conservation planning we have done with US Fish and Wildlife Service, we know a great deal about the ecological values of this watershed; which, in turn, has informed our investments of over \$64 million to protect these critical and unique resources.

Rosemont Mining Proposal Will Adversely and Irreversibly Impact the Cienega Basin Watershed the County has Protected

Rosemont's mining proposal will have significant long-term and adverse impacts on the watershed and riparian systems within the Cienega Basin Watershed, both from the direct activity of mining where WUS, ephemeral streams and riparian areas will be completely destroyed. By our estimate, approximately 100 miles³ of stream channels will be directly destroyed by the mining activity (see Attachment 3). The 404(b)(1) Alternatives Analysis relies on a much smaller subset of potentially jurisdictional waters for its analysis. Impacts to WUS include dredging to obtain "soils" for future reclamation, and excavation and filling to create the mine. Furthermore, due to the upper watershed location of the mining activity, there will be long-term and continuing adverse and indirect impacts due to the loss of surface water flows because of topographical alteration of the upper watershed, various diversion channels, and interception of groundwater subflows by the mine pit excavation itself and by dewatering.

These impacts must be fully mitigated by Rosemont in a meaningful, measurable and verifiable manner.

³Clean Water Act Section 404 Comments on #SPL-2008-00816-MB, Pima County, 2012.

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US Environmental Protection Agency Region IX November 7, 2013 Letter Expresses Real and Definable Concerns that Have Not Been Factually Disputed

Pima County and the RFCD share many of the same concerns over the mitigation proposal as those expressed by the US Environmental Protection Agency (EPA) in their November 7, 2013 letter. Among the many concerns raised by the EPA was the fact that Rosemont must demonstrate clear compliance with the Clean Water Act, and neither the EIS nor the scant mitigation proposal contained in the Final Environmental Impact Statement (FEIS) demonstrate such compliance. They failed to quantify certain upstream and downstream impacts and underestimated impacts to groundwater-supported ephemeral and intermittent streams and springs.

During scoping in 2008, Pima County identified the potential for the mine to cause significant degradation of aquatic ecosystems, including Empire Gulch, various springs, Davidson Canyon and upper and lower Cienega Creek. We provided detailed outlines of hydrologic, hydraulic and geomorphic studies needed to assess impacts to the Outstanding Waters of Davidson Canyon, studies that were never conducted and which would have reduced the uncertainties federal and state agencies faced later in their effects analyses.⁴ We also provided detailed reviews of the mine's groundwater and surface water models and provided our own groundwater model, which was reviewed by US Geological Survey staff.⁵

We completely agree with the EPA that the Sonoita Creek and Fullerton Ranch are inappropriate compensatory mitigation for impacts to WUS, principally because neither Fullerton Ranch nor Sonoita Creek are in the same watershed. In 2008, the Corps adopted a watershed approach to mitigation. In 2009, Pima County asked that mitigation be located close to the area of effects, adjacent to other protected land, and protected in perpetuity with legal instruments that secure mineral, as well as water, resources.⁶ This same letter provided an extensive list of sites located within the watershed that might offer permittee-based mitigation.

⁴April 29, 2008 Scoping Letter to Ms. Bev Everson, Forest Geologist, from C.H. Huckelberry, Pima County Administrator, Attachment 10.

⁵2008 Groundwater Model; Pima County DEIS Comments; Pima County PAFEIS comments; Pima County Section 404 Comments; Pima County February 17, 2010 Letter to Forest Supervisor Jeanine Derby.

⁶December 23, 2009, Letter to Jeanine Derby from C.H. Huckelberry.

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In addition, the Interagency Review Team, of which Pima County is a member, has yet to see or approve 1) an appropriate functional assessment that describes the aquatic resource values associated with impacts and mitigation or 2) an assessment of the relationship between the impacts and the mitigation that is appropriate to the scope and degree of the impacts and which are reasonably enforceable.

Furthermore, neither the Corps nor the Forest Service, as the lead agency, has adequately considered interrelated tribal issues. We agree with the Tohono O'odham Nation that there have been ineffective consultations with Native American communities regarding the impact of the proposal on traditional cultural places, including streams and springs. Given the close locational association of historic properties, archeological sites and traditional cultural places to WUS, any disruption or destruction of these Waters will disproportionately destroy these cultural resources, which are located where the water either is or was. Federal agencies, in their conduct of this process, have failed to provide opportunities for meaningful involvement of tribal communities. The mitigation plan, as currently described, is unlikely to relieve the disproportionality of the impacts to the Tohono O'odham Nation or other consulting tribes.

Rosemont Proposed Mitigation is Seriously Inadequate

The Rosemont proposal to mitigate the adverse effects of their direct and indirect impacts on WUS, ephemeral streams and riparian areas, as well as seeps and springs, is substantially inadequate. Rosemont proposes three areas for mitigation credit: 1) the Pantano Dam, including the transfer of 1,122 acre feet of appurtenance surface water rights and the diversion facilities in a nearby groundwater well; 2) Sonoita Creek Ranch; and 3) Davidson Canyon preservation lands. Our comments on each of these proposals appear below.

Pantano Dam

While this proposal will have a positive effect on the ecosystem, it will not produce the desired mitigation, primarily because the appurtenant surface water right is not as advertised at 1,122 acre feet; it is more realistically no more than 360 acre feet per year and declining. As part of our review of the Rosemont EIS and concurrent with development of the possible Cienega ILF, Pima County and RFCD have questioned the availability of wet water to the site.⁷ Given the

⁷August 14, 2013 PAFEIS Comments; RFCD Letter to Marjorie Blaine, July 31, 2013.

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RFCD have questioned the availability of wet water to the site.⁷ Given the specific reductions in flows that have been observed at the site and the trend toward reduced flows due to climate change and other factors such as exempt well drilling,⁸ I do not see sufficient wet water to guarantee the long-term success of a project intended to restore lost aquatic functions.

Clearly, an undependable surface water flow of approximately 360 acre feet per year is not the same as a legally possible annual flow of 1,122 acre feet. This element of the Rosemont mitigation proposal fails because it cannot be relied upon to produce the necessary mitigation credits due to an unpredictable and insufficient long-term water supply.

Sonoita Creek Ranch

Rosemont also proposes to mitigate impacts through the purchase of the Sonoita Creek Ranch. This property lies outside the Cienega Basin and violates the County's desired principle of having mitigation occur in the watershed where the damage occurs. Therefore, the Sonoita Creek Ranch should be completely discounted in providing mitigation for the Rosemont impacts. Sonoita Creek is also located in close proximity to other mines the Forest Service is considering in the Patagonia Mountains.⁹ It would be more appropriate for this site to serve to mitigate effects of those mines that are located in the Sonoita Creek Watershed, assuming that Sonoita Creek Ranch would remain unaffected.

Davidson Canyon Preservation and Enhancement

The preservation of small, isolated parcels, even within the Cienega Basin Watershed, will provide little overall mitigation. Well-accepted scientific theory in ecosystem preservation discounts the value of small, isolated conservation parcels for either conserving unique ecosystems or in mitigating for their losses.¹⁰ Rosemont proposes to destroy or deny access to an entire, intact, contiguous

⁷August 14, 2013 PAFEIS Comments; RFCD Letter to Marjorie Blaine, July 31, 2013.

⁸Water Resource Trends in the Cienega Creek Natural Preserve, Pima County, August 2013.

⁹FEIS, US Forest Service, December 2013.

¹⁰Diamond, J.M. 1975. The island dilemma: Lessons of modern biogeographic studies for the design of natural reserves. *Biological Conservation* 7:129-146; Wilcox, B.A., and D.D. Murphy. 1985. Conservation strategy: effects of fragmentation on extinction. *American Naturalist* 125:879-887.

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Santa Rita Unit of the Coronado National Forest, greatly diminishing the connected ecosystem value of this portion of the Forest. The loss of these resources, including those subject to wetland regulations, cannot be compensated for by a few small and isolated parcels within the Cienega Basin Watershed. The Davidson Canyon preservation lands do not provide meaningful mitigation by themselves. Those parcels most proximal to Rosemont will be most degraded by the changes in the watershed, and other indirect impacts.

It would appear the lands acquired and/or offered by Rosemont as mitigation are simply lands of acquisition by convenience rather than lands of true mitigation. Rosemont, in their letter of December 13, 2013, laments the lack of available mitigation opportunities in the Barrel Canyon/Davidson Canyon Watershed; and in doing so, demonstrates they both fail to understand the watershed or acknowledge the efforts of both the County and RFCD, as well as the US Bureau of Land Management, in conserving the resources within the Cienega Basin Watershed over the last 30 years. If land are "not available" for Rosemont's mitigation, it is because previous actions have conserved them; and it is these same conserved lands that are now threatened by Rosemont's actions.

In summary, all three mitigation strategies are less than adequate compensation. The County respectfully requests that the principle of mitigation in the watershed of impact be adhered to by federal approval agencies because of the County's significant monetary and time investment in conserving the unique water-based resources of the Cienega Basin Watershed.

Significant lands are still available in the watershed for acquisition and restoration. For instance, staff confirms that Andrada Ranch is still for sale (see Attachment 2). It abuts the Rosemont and Bar V Ranches, including over 16,000 acres of State grazing lease and 271 acres of fee-owned land centered on over 4,000 linear feet of Davidson Canyon upstream of the Outstanding Waters reach. It also includes water rights to a perennial or near-perennial stock pond and a perennial spring located on fee-owned land that has wetland vegetation and restoration potential.

A horse ranch along Gardner Canyon was also for sale during the last year and may still be available. Gardner Canyon is an important tributary to Cienega Creek located just south of the Pima County line.

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In addition, there are over 100,000 acres of unconserved State Trust lands within the Cienega Creek Watershed that could be available for mitigation. Pima County has successfully purchased almost 3,000 acres of State Trust land since 2009. In 2012, mining company Freeport McMoRan successfully purchased over 8,000 acres of State Trust land to construct a new tailings pile and mitigate its effects at its Sierrita Mine west of the proposed Rosemont Mine. These purchases demonstrate that the purchase of State Trust land for mitigation is plausible, yet Rosemont has not pursued this option.

Pantano or Cienega In-lieu Fee Project May Not be the Best Compliance Vehicle for Rosemont

The RFCD, as an in-lieu fee (ILF) provider under an approved agreement with the Corps, has been working to develop a project located in the Cienega Creek Natural Preserve (Pantano Dam) that would improve the conditions of the aquatic resources there in conjunction with acquisitions or funds that would be made available by Rosemont Copper.

A number of outstanding, interrelated issues have arisen from consideration of the Pantano ILF project, as well as the nature of the Rosemont project and the roles of the regulatory agencies, which include the County, RFCD, Corps, and the US Fish and Wildlife Service. I would appreciate further discussions with you and your staff on these topics.

1.

Many of the Rosemont proposals for the Pantano Dam are tangible actions that can help assure the water supply, but they cannot manufacture water for a stressed watershed. No one has been able to answer the question of whether the planned mitigation is actually possible given the hydrologic reality facing this watershed.

Another essential element of the decision relates to the liability that RFCD may have, if, for any reason, the ILF mitigation bank does not produce or sustain the riparian restoration required. Obviously, the County and RFCD cannot and will not be held financially liable for Rosemont mitigation miscalculations. Please note that an ILF project here would require approval. This approval has not been granted or even scheduled, as there is no final plan available for consideration.

As you are aware, every compensatory mitigation project has an ecological risk and a cost liability associated with the risk. These risks may be managed by the use of mitigation ratios, financial requirements such as performance bonds, or advanced mitigation. Some

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form of financial assurance is an option to manage the risk for compensatory mitigation by requiring the permittee to provide collateral to the Corps and/or ILF provider. Ultimately, it is the permittee that must be made responsible. For mining, the potential environmental impacts are significant; and the temporal lag is long between when the impacts occur and when compensatory mitigation is deemed successful. Therefore, the ecological risks are very high. As a potential ILF within an Arizona Mining District, we would be interested in knowing how other Corps District Offices have handled ILF programs for mining, such as coal mining in Kentucky, Virginia and West Virginia.

Through the ILF program, I remain committed to ensure that those causing the impacts are required to pay the full cost of same and are not subsidized in any way by RFCD taxpayers. Rosemont, not Pima County, must remain financially responsible for assuring the success of this project.¹¹ If this is not possible within the framework of the ILF and the Corps' regulatory timeframes, then we can either explore some type of contractual arrangement for permittee-responsible mitigation on County or RFCD land or abandon the matter entirely.

At this point, I strongly prefer permittee responsible mitigation under the legal authority of the Corps.

Meaningful Mitigation Relies on a Dependable Water Supply

It has become clear to me that an independent supply of water is needed to avoid placing the burden of long-term risks of failure upon Pima County. Additional water supply from outside the Cienega Basin is needed to assure that sufficient wet water is available in perpetuity.

Merely pumping wells near the stream would be "robbing Peter to pay Paul" and could impair the health of the stream and riparian forest above the dam. Other potential sources of water might include Central Arizona Project water or effluent purchased from the US Bureau of Reclamation wheeled through the Tucson Water interconnection to Vail or delivered through an extension of Tucson's reclaimed line (see Attachment 2).

An additional, independent water supply would also reduce the short-term implementation risks and potential temporal losses of aquatic resource functions associated with issues relating to surface water rights. The proposed ILF project depends on water spreading to

¹¹ Memorandum to the Pima County Board of Supervisors, August 13, 2013.

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generate WUS credits outside the main channel of Cienega Creek. Such water spreading would require a sever-and-transfer, and this process could be delayed or otherwise impaired by others. Also, an earlier priority water right in the ILF project area has recently been identified. The status of this right is not yet resolved.

Another key consideration for Pima County is that all of the area in question along Cienega Creek has been identified as mitigation for our upcoming Section 10(a)(1)(B) permit (Section 10) from the US Fish and Wildlife Service. Unfortunately, the regional habitat conservation planning in Pima County has not been well-integrated into federal evaluations for the Rosemont project. A copy of the Pima County Multi-species Conservation Plan (MSCP) and DEIS was provided to all involved federal agencies for review in late 2012. We are still waiting for the federal agencies to sort out the overlap between the MSCP and ILF programs. If parts of the Cienega Creek Natural Preserve might be rendered ineligible for MSCP species credit by the ILF project, the taxpayers must not bear the cost, and replacement habitat must be acquired.

Also unclear to me is the degree to which the Cienega or Pantano ILF projects might be vulnerable to re-consultation and additional National Environmental Policy Act review due to the premature release of the Rosemont FEIS, which contained very vague descriptions of all of the proposed WUS mitigation projects. Would RFCD's execution of the Pantano ILF project be subject to additional federal requirements, liabilities or delays because the FEIS and Biological Opinion relied on vague descriptions? These are issues that must be resolved prior to any final Rosemont approvals or permitting.

A Sustainable Mitigation Strategy for Rosemont Impacts and Our View of Measureable, Meaningful and Verifiable Mitigation

I recommend that Rosemont's CWA Section 404 permit be denied unless Rosemont commits to the following mitigation:

- Purchase and convey the Pantano Dam site to the RFCD;
- Purchase and convey 1,122 acre feet per year of senior surface water rights to the RFCD;
- Purchase and convey the distribution pipeline between the Pantano Dam and the Lago del Oro Golf Course to the RFCD;
- Purchase and convey Water Production Well Registration Number 602949, owned by Vail Water Company, to the RFCD;

Colonel Kim Colloton

**Re: US Environmental Protection Agency Region IX November, 2013 Letter Regarding Its
Analysis of the Updated Draft Clean Water Act Section 404 Compensatory
Mitigation Proposal for Rosemont Mine, Pima County, Arizona and the December 13,
2013 Rosemont Copper Letter Regarding the Same Subject**

December 30, 2013

Page 11

- Construct and convey to the RFCD a reclaimed water extension line from Drexel Road at the Pantano Wash approximately 11 miles to the Pantano Dam of sufficient size to deliver approximately 750 acre feet per year of reclaimed water to the Pantano Dam site;
- Purchase from the Bureau of Reclamation or any other reclaimed water owner and deliver approximately 750 acre feet annually of reclaimed water to the Pantano Dam site to the RFCD;
- Purchase and convey the Andrada Ranch, consisting of 276 fee-owned acres along Davidson Canyon, to the RFCD, or other suitable and targeted compensatory mitigation lands as identified in our December 23, 2009 letter to Forest Supervisor Jeanine Derby.

Under this mitigation proposal, Rosemont would be performing permittee-responsible mitigation and would remain financially responsible for successful mitigation as determined by the Corps and concurred with by the RFCD. The RFCD would enter into an appropriate operating agreement with the Corps to carry out the mitigation required if such is necessary.

The Rosemont compensatory mitigation proposal is inadequate and fails to provide measurable and meaningful reduction of impacts because there are more impacts to WUS than have been analyzed, and the offsite impacts are connected and profound.

I would like to thank you for taking the time to consider the County and RFCD perspective on this issue, and I would be happy to discuss this matter with you in person during your upcoming visit to Pima County in January 2014.

Sincerely,



C.H. Huckelberry
County Administrator

CHH/mjk

Attachments

Colonel Kim Colloton

**Re: US Environmental Protection Agency Region IX November, 2013 Letter Regarding Its
Analysis of the Updated Draft Clean Water Act Section 404 Compensatory
Mitigation Proposal for Rosemont Mine, Pima County, Arizona and the December 13,
2013 Rosemont Copper Letter Regarding the Same Subject**

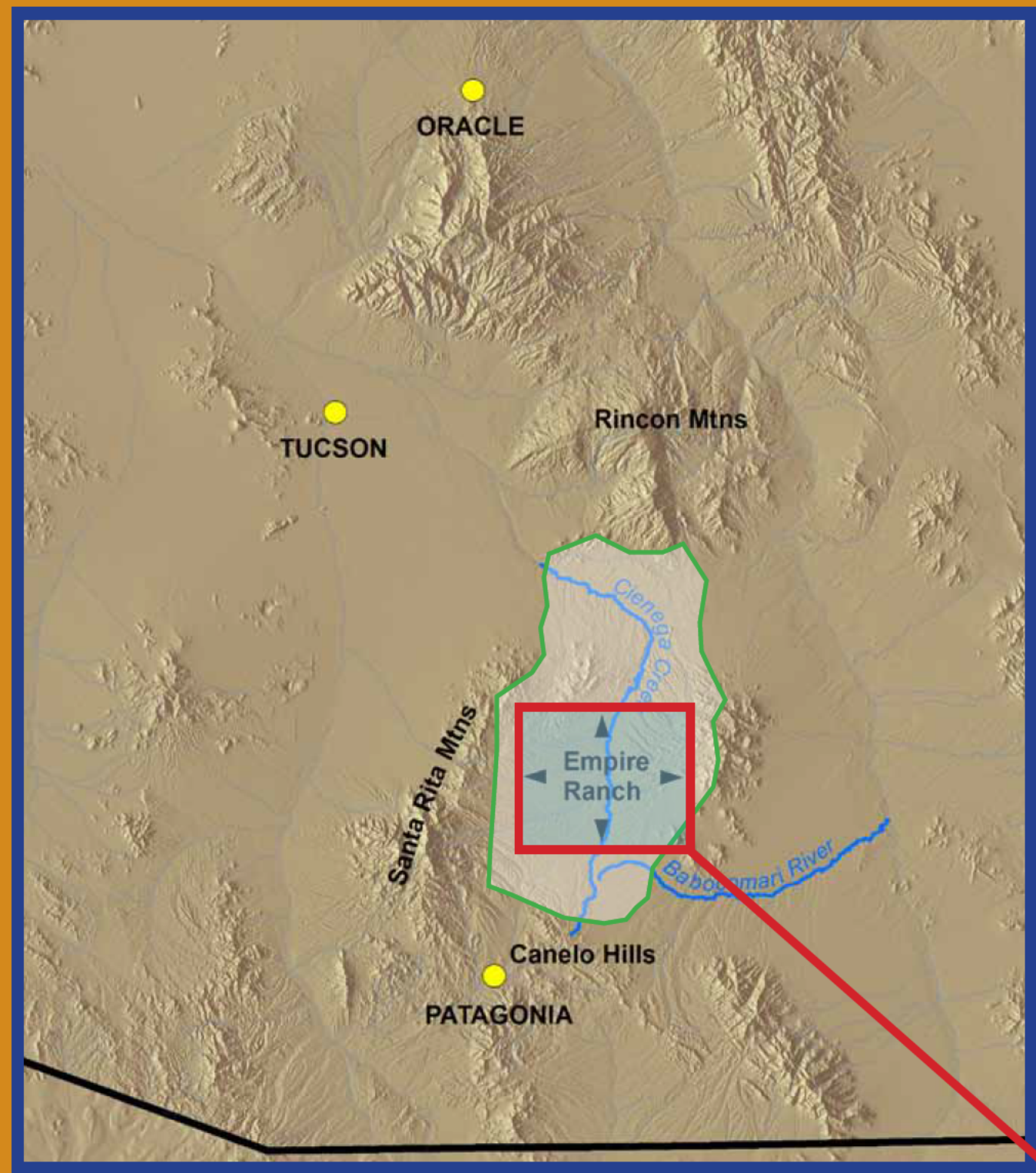
December 30, 2013

Page 12

c: The Honorable Ned Norris, Jr., Chairman, Tohono O'odham Nation
 Jared Blumenfeld, Region IX Administrator, US Environmental Protection Agency
 Suzanne Shields, Director, Pima County Regional Flood Control District
 Julia Fonseca, Environmental Planning Manager, Pima County Office of
 Conservation and Sustainability

ATTACHMENT 1

Re-assembling the Empire Ranch



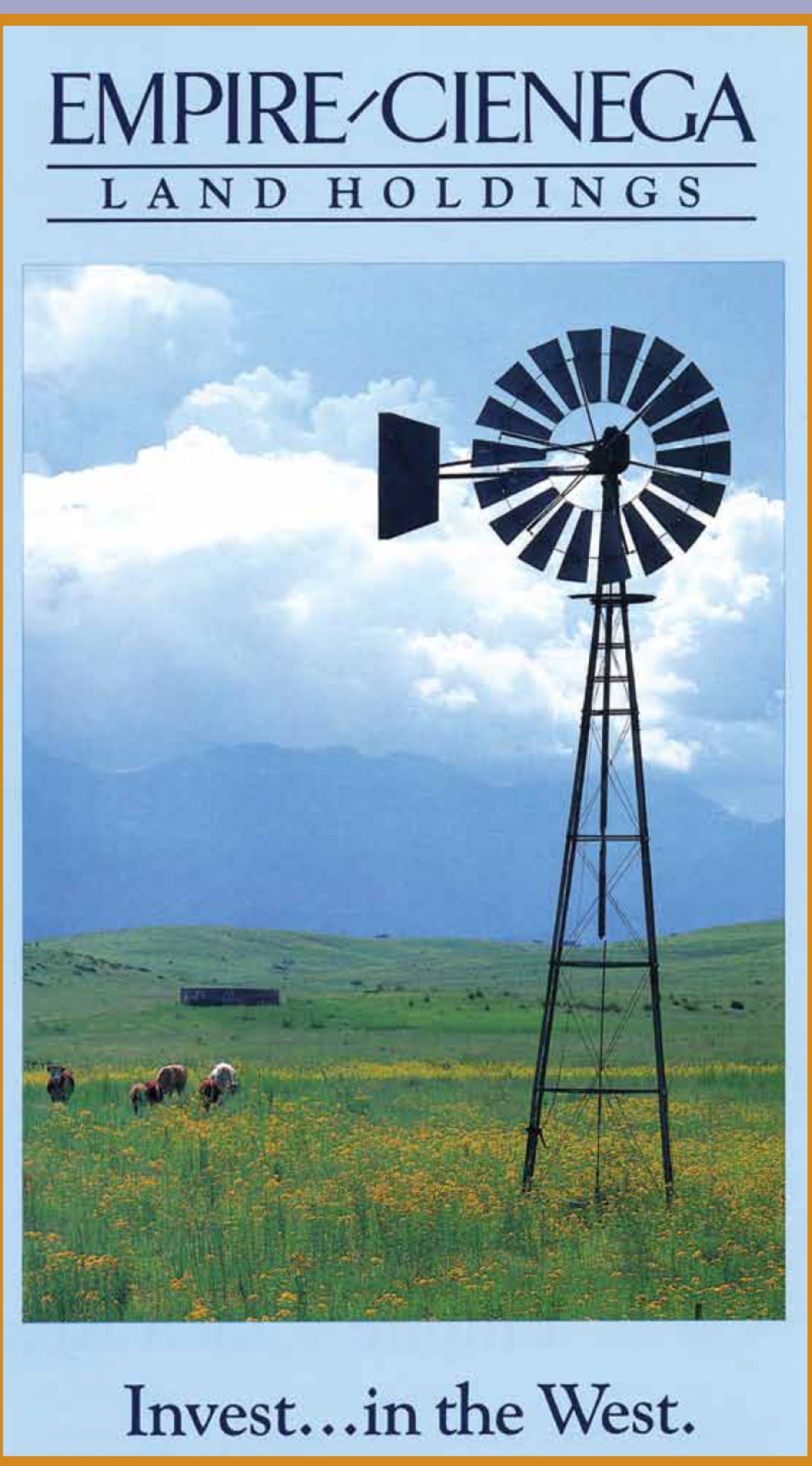
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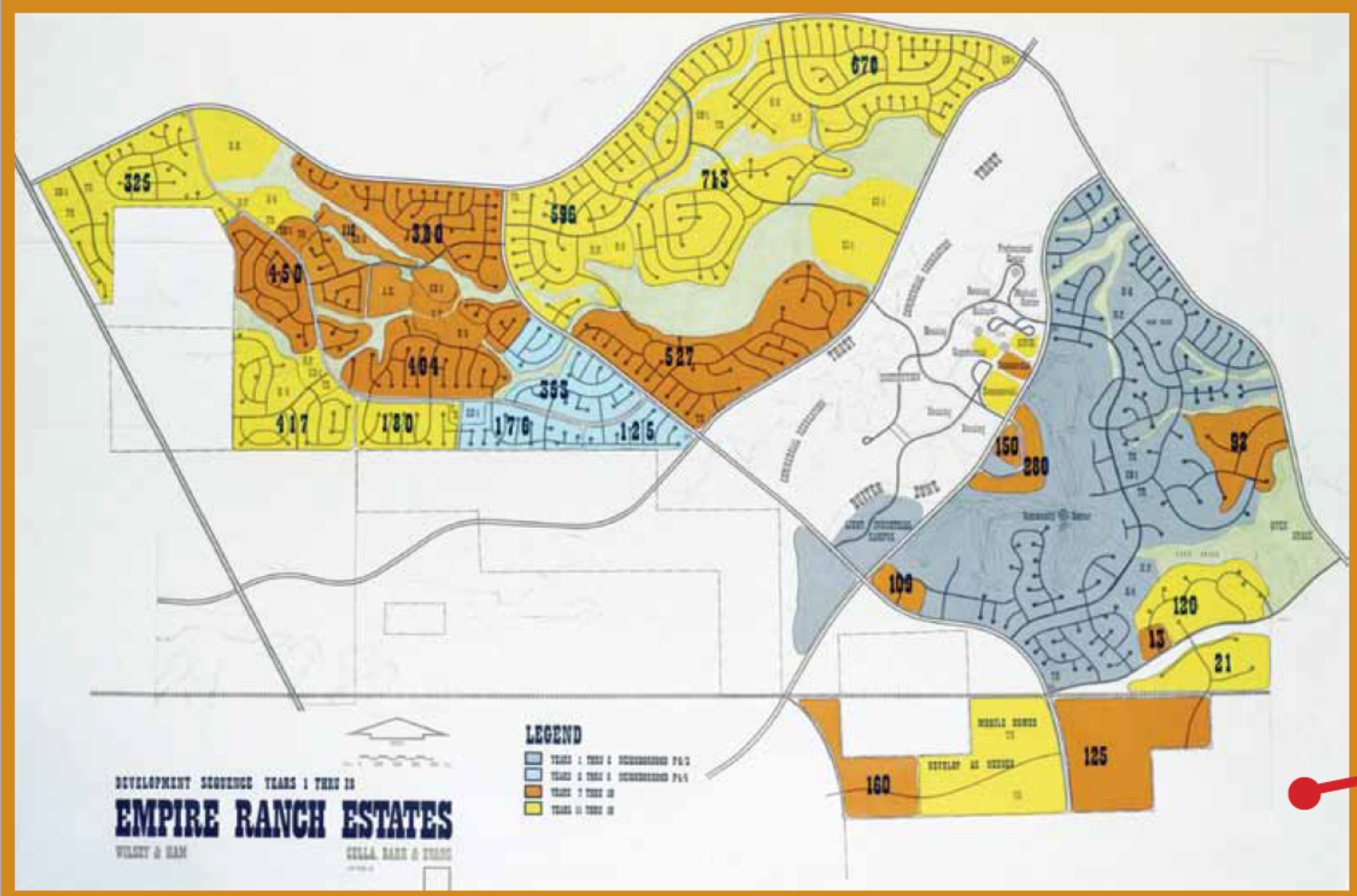


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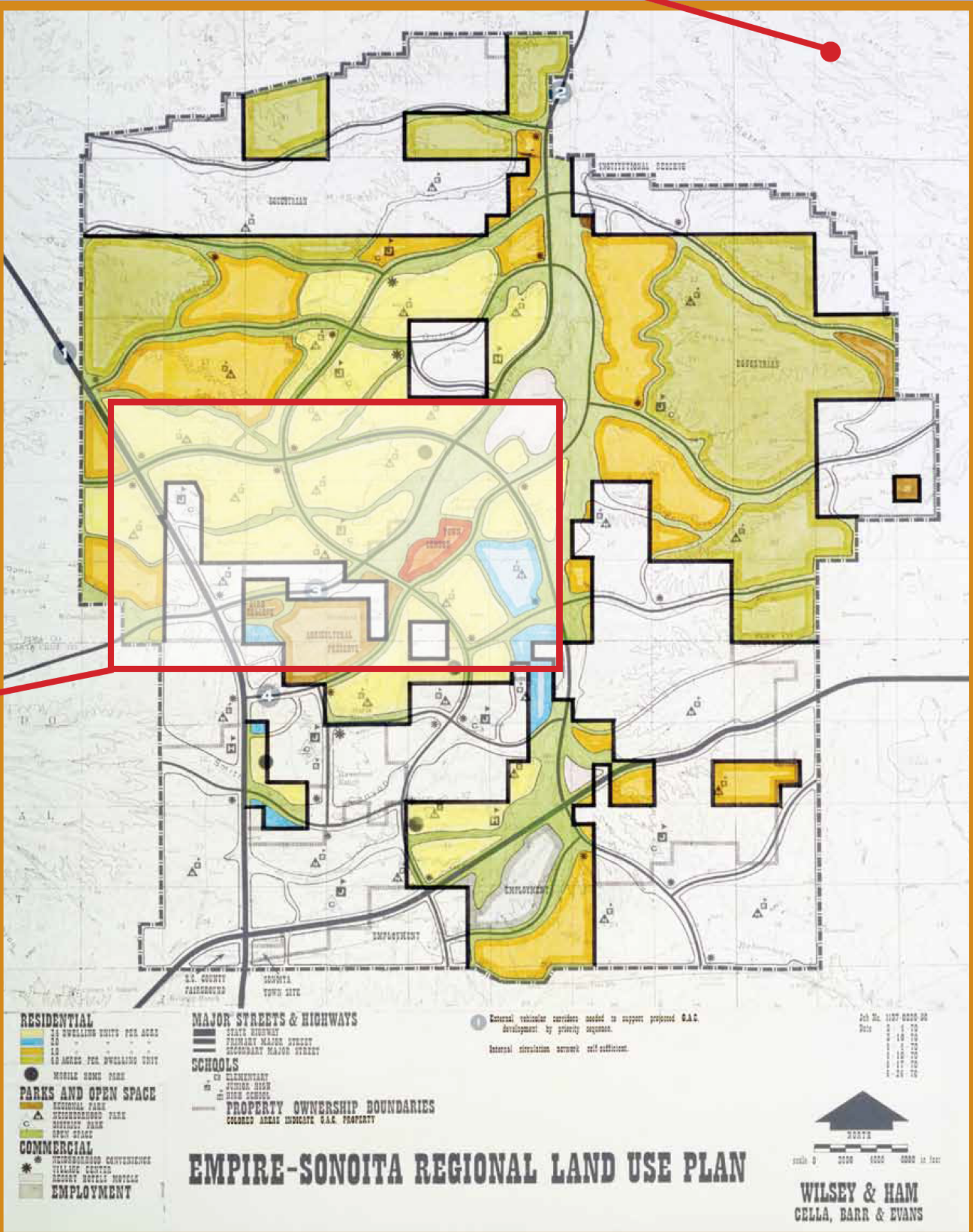
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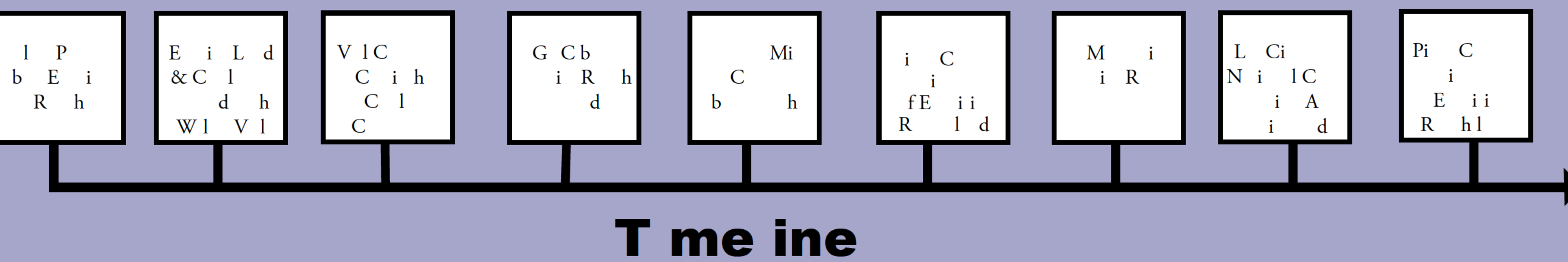
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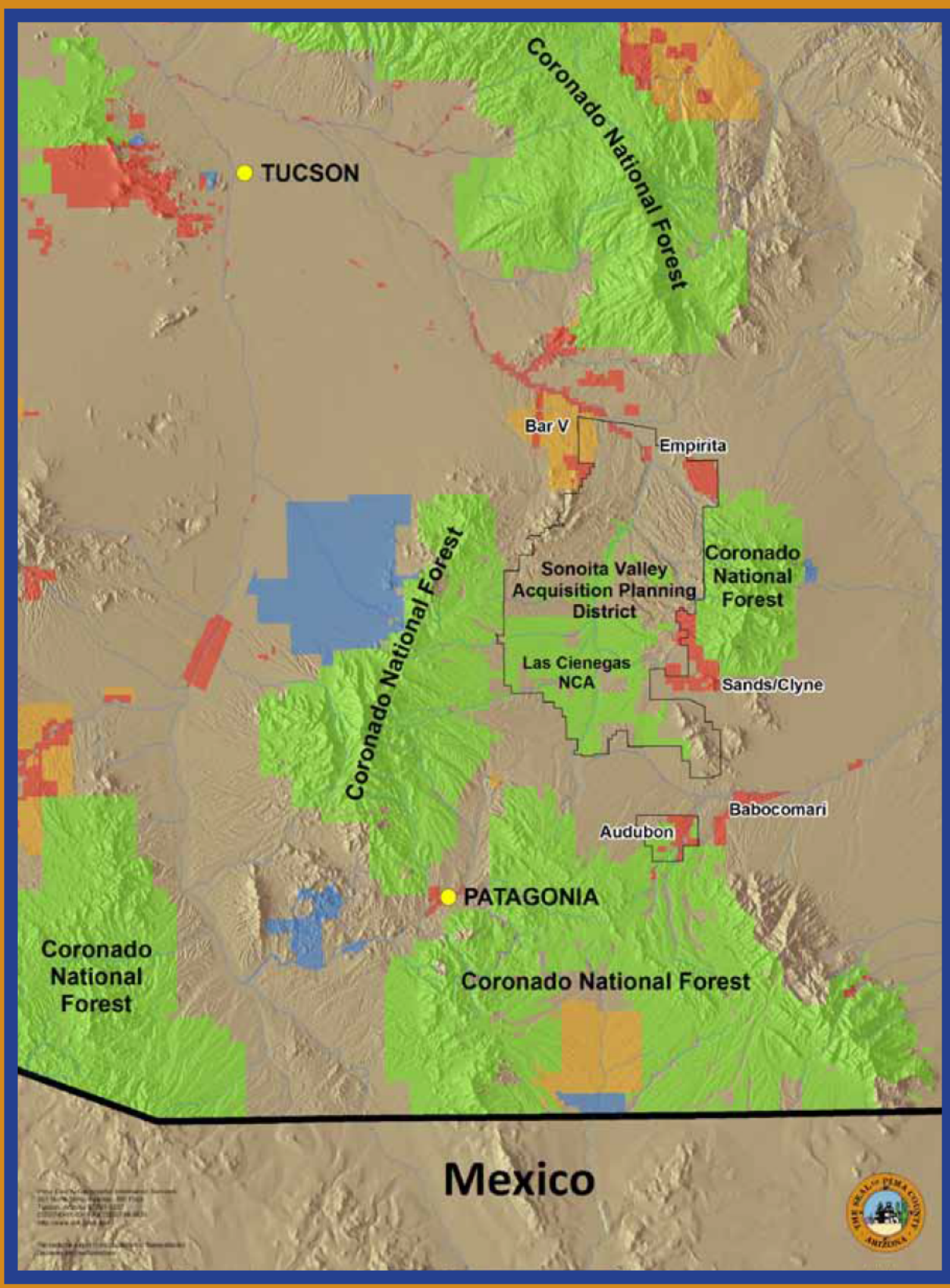
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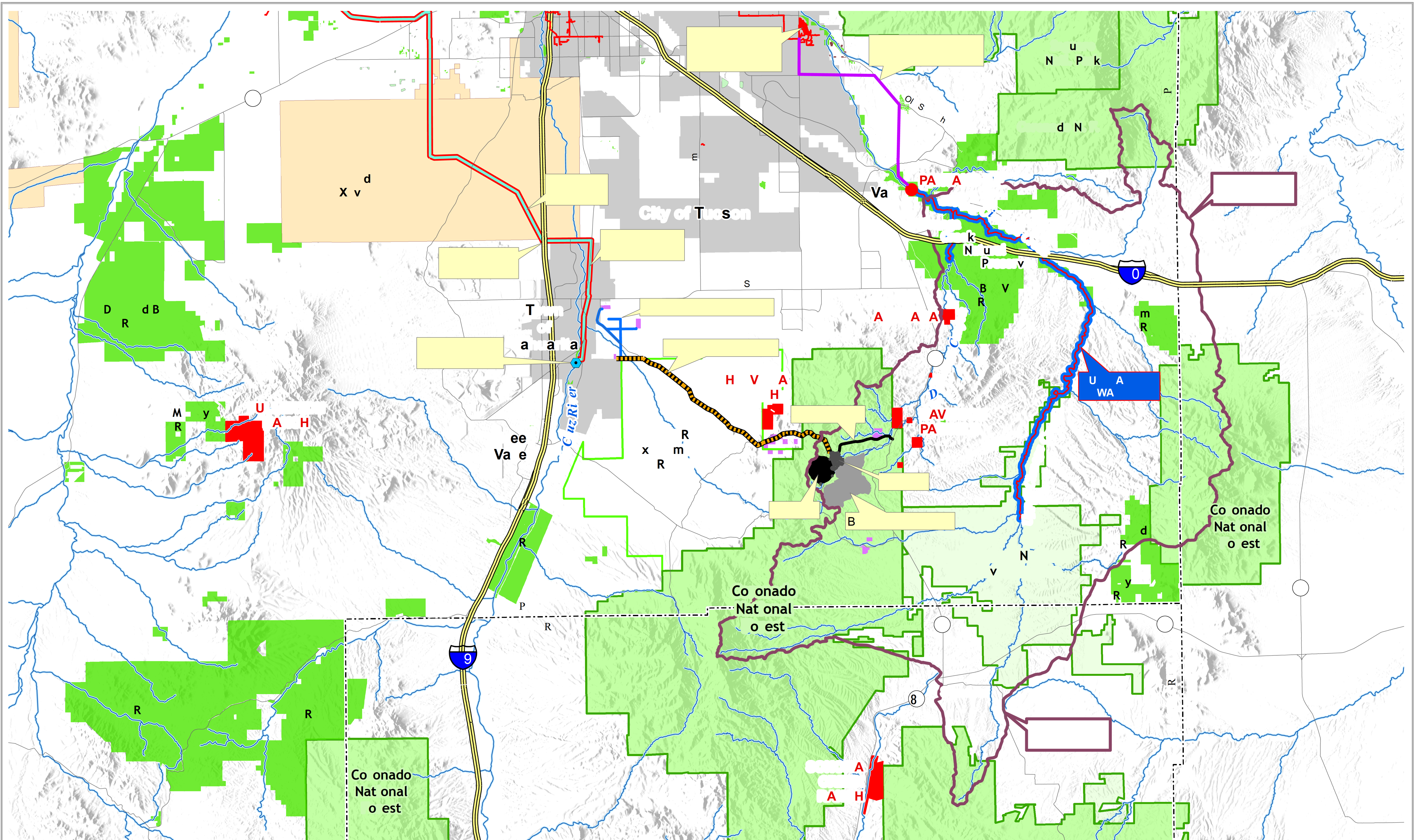
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ATTACHMENT 2



Proposed Rosemont Mine Project Features

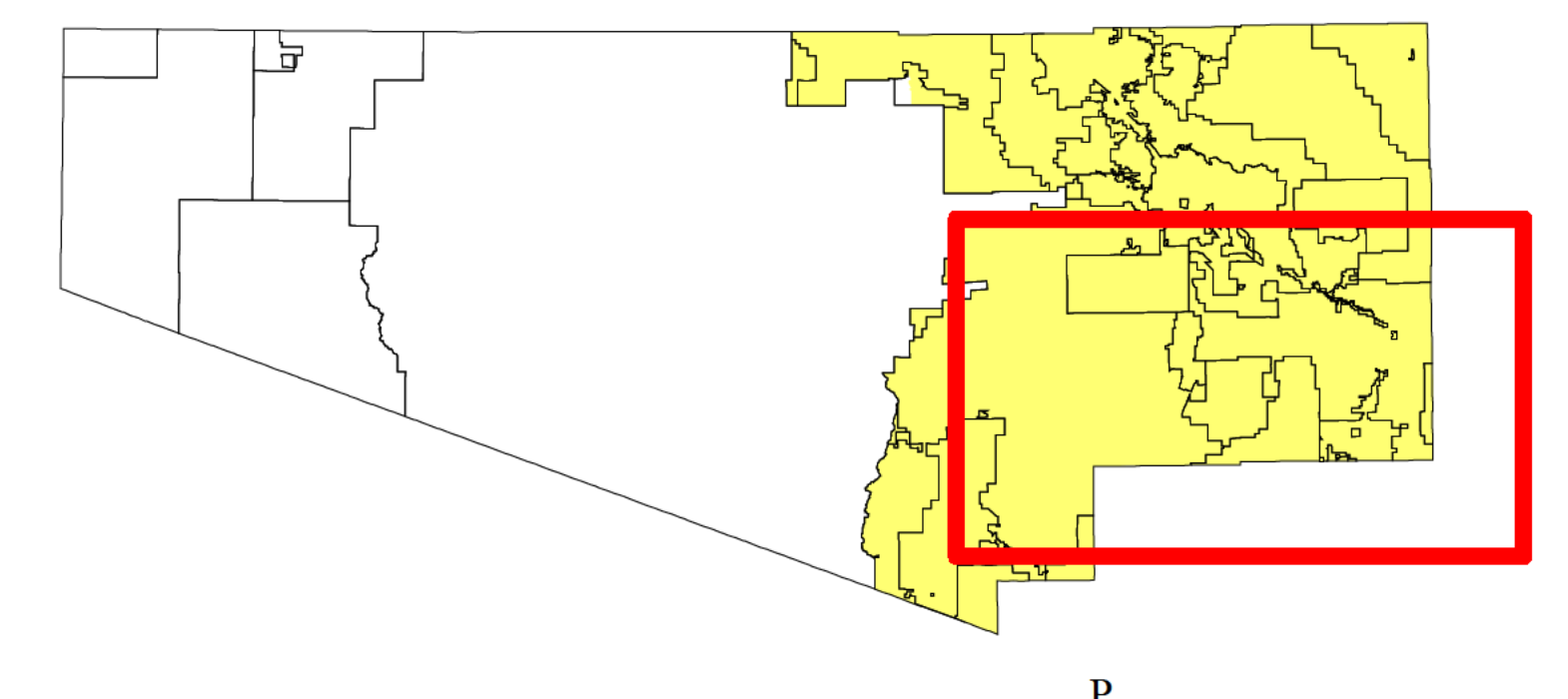


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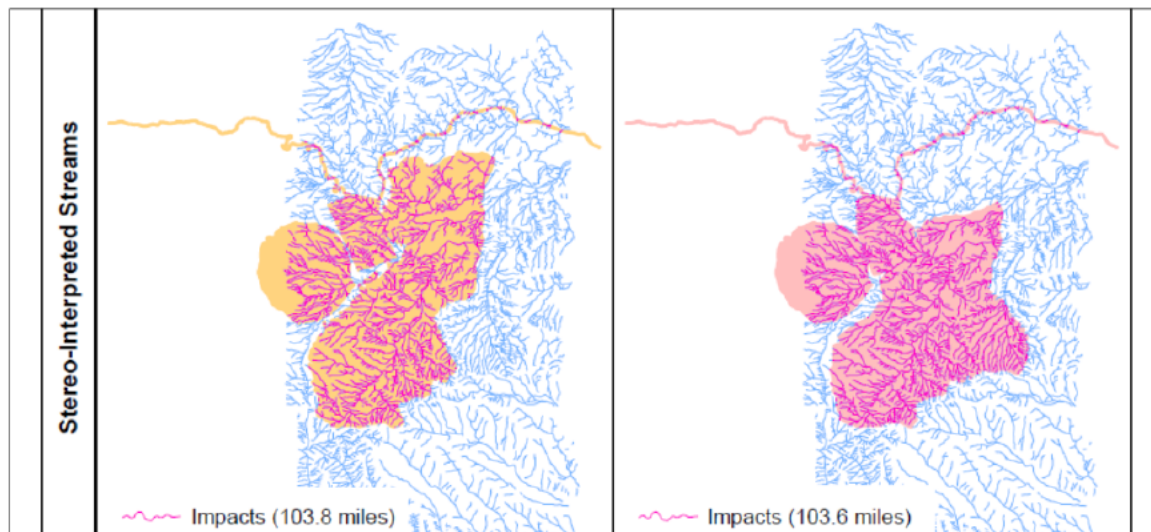


- Rosemont area and
- Pima County forest land
- Federal forest land

- Major Steam or Water
- Incorporated Area
- Balcones



ATTACHMENT 3



Mine Plan of Operation (MPO) in orange at left, Preferred (Barrel) Alternative in pink at right. Mine access road is shown as part of the footprint for both. Figure provided by Pima County IT.

Delineation of stream centerlines based on stereo-photographs suggests that many headwaters streams were not analyzed in the Application, nor delineated by WestLand Resources as potentially jurisdictional. Over 100 miles of streams would be directly affected by the Mine Plan of Operations, (shown at left). An equal number of stream-miles would be affected by the Forest's Preferred Alternative (Barrel), shown at right. By contrast, Westland's preliminary JD predicted only 36 channel miles of impact from the MPO and 34 channel miles of impact from the Barrel alternative.

The permit application also appears to greatly underestimate the widths of WOUS. An estimate of the area of Waters of the US (Waters) based on the limits of the 10-yr floodplains yielded 116 acres which is approximately three times larger than the 38.6 acre estimate provided in the permit application. In Pima County, the limits of the 10-yr floodplain are often used as an approximation for the limits of the ordinary high water mark. The analysis described in Appendix D of our comments shows that this criterion results in much higher acreage than those in the permit application and DEIS. Furthermore, the analysis in Appendix D did not estimate 10-yr floodplain areas for the tributary watersheds mentioned above, so the area of the 10-yr floodplains is actually greater than the 116 acres calculated.

In addition to the lack of documentation on the establishment of jurisdictional limits to determine impacts to Waters, these are preliminary JDs. As such, for the purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S.

In general, Regulatory Guidance Letter 08-02, states that an approved JDs should be used to support individual permit application. We requested that the Corps develop and use approved JDs. This is warranted because of the scope of the proposed mining operation and environmental impacts and the likelihood that the Application grossly underestimates potential impacts to Waters.

From: [Scott, Jeff](#)
To: [Goforth, Kathleen](#); [Horst Greczmiel](#); [Brush, Jason](#)
Subject: RE: Next Steps and Agency views on Mitigation - Deliberative - pre-decisional RE: Rosemont Mine - Deferral?
Date: Wednesday, January 22, 2014 8:38:00 AM

Horst-

We appreciate you reaching out to us and even more importantly all the leadership help you have been providing as part of this process. I need to reschedule one of a couple things and need about another hour to figure out what time will work. We will get back to you soon.

Thanks!

Jeff Scott
Director, Waste Management Division &
Communities & Ecosystems Division
EPA Region 9
75 Hawthorne St
San Francisco, CA 94105

Phone: (415) 972-3311
Fax: (415) 947-3530

From: Goforth, Kathleen
Sent: Wednesday, January 22, 2014 8:10 AM
To: Horst Greczmiel; Scott, Jeff; Brush, Jason
Subject: Re: Next Steps and Agency views on Mitigation - Deliberative - pre-decisional RE: Rosemont Mine - Deferral?

I am available after 2pm PST today.
- Kathy

From: Greczmiel, Horst <(b) (6)>
Sent: Tuesday, January 21, 2014 3:13:09 PM
To: Goforth, Kathleen; Scott, Jeff; Brush, Jason
Subject: RE: Next Steps and Agency views on Mitigation - Deliberative - pre-decisional RE: Rosemont Mine - Deferral?

Kathy, Jeff, and Jason,
I'd like to have a brief call with the Region staff most focused on the water/wetlands mitigation prior to the Friday 3pm call. Are you and Jeff available tomorrow the 22d after 1pm your time?
Thank you, Horst

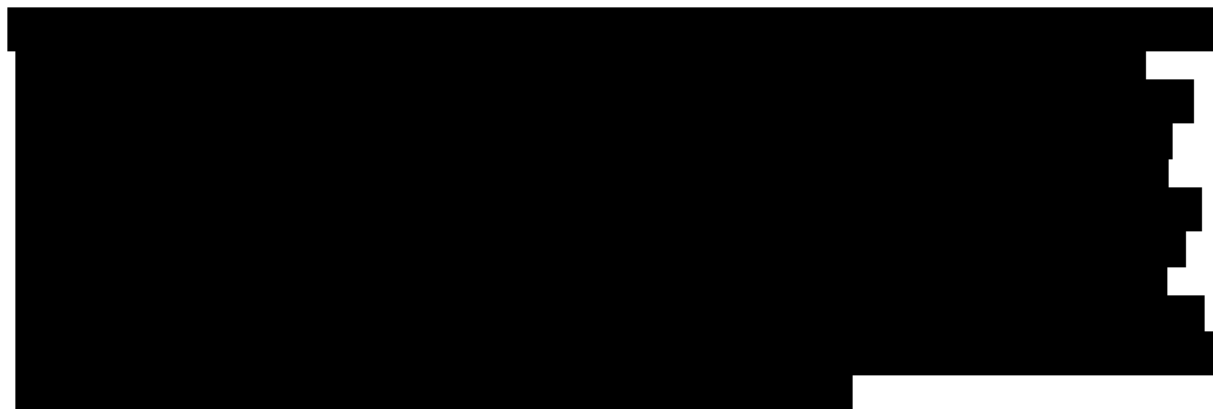
From: Goforth, Kathleen [<mailto:Goforth.Kathleen@epa.gov>]
Sent: Thursday, January 09, 2014 12:13 PM
To: Greczmiel, Horst
Cc: Blumenfeld, Jared; Diamond, Jane; Scott, Jeff; Kopocis, Ken; Bromm, Susan; Rader, Cliff; Brush, Jason; Jessop, Carter; Herrera, Angeles; Hanf, Lisa; Johnson, Kathleen; Leidy, Robert; Evans, David;

Goldmann, Elizabeth

Subject: RE: Next Steps and Agency views on Mitigation - Deliberative - pre-decisional RE: Rosemont Mine - Deferral?

Horst –

(b)(5) - deliberative

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Best wishes for the new year –
-Kathy

From: Greczmiel, Horst [[mailto:\(b\) \(6\)](#)]

Sent: Monday, December 23, 2013 7:46 AM

To: 'Cal Joyner (cjoyner@fs.fed.us)'; 'Jim Upchurch (jupchurch01@fs.fed.us)'; Kopocis, Ken; Blumenfeld, Jared; Bromm, Susan; Rader, Cliff; Goforth, Kathleen; 'Ann Acheson - CEQ (aacheson@fs.fed.us)'; 'Joe Carbone (jcarbone@fs.fed.us)'; 'Robert Bonnie (robert.bonnie@osec.usda.gov)'; 'Meryl Harrell (meryl.harrell@osec.usda.gov)'; 'Blaine, Marjorie E SPL'; 'Castanon, David J SPL'; [Meg.E.Gaffney-S](#); 'Dave Sire (david_sire@ios.doi.gov)'; 'Deborah Rawhouser (drawhous@blm.gov)';

Cc: Guzy, Gary S.; Boots, Michael J.; Patel, Manisha

Importance: High

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CEQ Consultation/Referral

#

Thank you all and have a safe, healthy, and joy-filled holiday!

Horst Greczmiel
Associate Director for NEPA Oversight
Council on Environmental Quality
202-395-0827
HGreczmiel@ceq.eop.gov



Please consider the environment before printing this e-mail

From: [Goforth, Kathleen](#)
To: [Horst Greczmiel](#); [Scott, Jeff](#); [Brush, Jason](#)
Subject: Re: Next Steps and Agency views on Mitigation - Deliberative - pre-decisional RE: Rosemont Mine - Deferral?
Date: Wednesday, January 22, 2014 8:09:45 AM

I am available after 2pm PST today.

- Kathy

From: Greczmiel, Horst <Horst_Greczmiel@ceq.eop.gov>
Sent: Tuesday, January 21, 2014 3:13:09 PM
To: Goforth, Kathleen; Scott, Jeff; Brush, Jason
Subject: RE: Next Steps and Agency views on Mitigation - Deliberative - pre-decisional RE: Rosemont Mine - Deferral?

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Thank you, Horst

From: Goforth, Kathleen [mailto:Goforth.Kathleen@epa.gov]
Sent: Thursday, January 09, 2014 12:13 PM
To: Greczmiel, Horst
Cc: Blumenfeld, Jared; Diamond, Jane; Scott, Jeff; Kopocis, Ken; Bromm, Susan; Rader, Cliff; Brush, Jason; Jessop, Carter; Herrera, Angeles; Hanf, Lisa; Johnson, Kathleen; Leidy, Robert; Evans, David; Goldmann, Elizabeth
Subject: RE: Next Steps and Agency views on Mitigation - Deliberative - pre-decisional RE: Rosemont Mine - Deferral?

Horst –

The views that we previously submitted (in your message below) continue to reflect EPA's perspective on the waters of the U.S. impacts of the proposed Rosemont Mine project and the deficiencies of the mitigation concepts proposed to date. As noted in those views, the proposed mine project would eliminate a largely undisturbed network of 18 linear miles of desert streams through direct fill, and cause groundwater drawdown impacting surface waters across approximately 64,000 acres of the Cienega Creek watershed. These secondary 404 impacts will result in the loss of hundreds of additional acres of riparian vegetation and the drying of perennial streams, according to the EIS.

EPA believes a watershed approach to mitigation is both consistent with long-held Corps/EPA policy and regulations, and is necessary given the scope of impacts. Conceptually, what would be necessary to offset the impacts as we understand them would be a comprehensive, regional preservation program bringing priority conservation lands together that include at least as many waters of the U.S. stream miles (distributed similarly on the landscape—not lumped together in one small parcel) preserved as will be impacted. Preservation on this 1:1 basis would be necessary, but not sufficient under the regulations, unless waters of the U.S. can be functionally enhanced on the preservation lands (in ways that can be measured and verified). In the absence of functional enhancement, the stream miles preserved-to-impacted ratio would need to be significantly greater than 1:1. To the extent practicable, the mitigation should be in the Cienega Creek watershed to truly offset impacts.

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CEQ Consultation/
Referral

#

Thank you all and have a safe, healthy, and joy-filled holiday!

Horst Greczmiel
Associate Director for NEPA Oversight
Council on Environmental Quality

(b) (6)



Please consider the environment before printing this e-mail

From: [Maura Kwiatkowski](#)
To: [Ally Miller](#); [Andres Cano](#); [Benny Gomez](#); [Deb Miller](#); [Evangelina Quihuis](#); [Frank Franco](#); [Hope E. Cramer](#); [Jade Sia](#); [Jennifer C. Coyle](#); [Jennifer Cabrera](#); [Jennifer Eckstrom](#); [Jennifer Wong](#); [Joseph Cuffari](#); [Keith Bagwell](#); [Kiki Navarro](#); [Marcos Perez](#); [Michael Lundin](#); [Paula Maxwell](#); [Ramon Valadez](#); [Ray Carroll](#); [Richard Elias](#); [Sharon Bronson](#); [Shirley Lamonna](#); [Tom Ward](#)
Cc: ["jupchurch01@fs.fed.us"](#); ["ledmunds@fs.fed.us"](#); [Blumenfeld, Jared](#); ["Henry Darwin \(hrd@azdeq.gov\)"](#); ["Larry D Voyles \(lvoyles@azgfd.gov\)"](#)
Subject: Visual Understanding of the Adverse Impacts of the Rosemont Mine Proposal
Date: Friday, January 17, 2014 3:51:39 PM
Attachments: [SCA-COPIER-14011716290.pdf](#)

Good afternoon, Supervisors.

Please see the enclosed memorandum from Mr. Huckelberry regarding this subject.

Regards,
Maura

Maura J. Kwiatkowski
Chief Administrative Assistant to
Pima County Administrator Chuck Huckelberry
130 W. Congress Street, Floor 10
Tucson, Arizona 85701
520.724.8587



MEMORANDUM

Date: January 17, 2014

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator

A handwritten signature in dark ink, appearing to read "CHH", is written over the printed name "C.H. Huckelberry".

Re: **Visual Understanding of the Adverse Impacts of the Rosemont Mining Proposal**

As you know, the federal Environmental Impact Statement for the Rosemont Mine proposal is quite complex. It covers a full range of issues, including air, water, safety, transportation, flooding, biology, and other concerns. There is almost too much information to grasp the whole of this proposed mine. Likewise, the County's comments and review of the document are extensive. The points and counterpoints are being offered by project proponents, as well as opponents.

Providing the public a clear and adequate understanding of the proposal is difficult given its complexity. One clearly understandable impact relates to the sheer size of the disturbance area and its impact on the Coronado National Forest.

If it is built, the Rosemont Mine will essentially isolate and cut off 13,095 acres of the Santa Rita Ecosystem Management Unit (Santa Rita Unit) of the Coronado National Forest, thereby degrading the value of five percent of Forest's holdings in the unit. This will make it extremely difficult to sustain biodiversity in the northern section of the Santa Rita Mountains because movement of plant and animal individuals and genes across the Rosemont mine and associated infrastructure will be compromised by the land disturbance and associated activities from the mine. The report attached to this memorandum discusses the impacts on the integrity of the Northern Santa Rita Mountains for wildlife in greater detail.

The Coronado National Forest was established by Congress in 1908 and preserved huge blocks of mountain and piedmont systems in the Sonoran Desert. Over the years, as the human population has grown, the value of these large, undeveloped areas has played a critical role in maintaining biodiversity and ecosystem function in our region. Ecosystems operate best when they are in large, intact units with connectivity among them. More recently, conservation attention in the Sky Island region—in which the Coronado National Forest is embedded—has focused on maintaining or improving mountain-to-mountain connections to help ensure the maintenance of biodiversity. The focus on connectivity has been recognized by the Arizona Game and Fish Department, which undertook an extensive effort in 2006 to map wildlife movement corridors in southern Arizona.

Through our land-use and conservation planning work, we have come to understand a great deal about the interrelationship of the built environment with the long-term sustainability of viable ecosystems and environments. We spent years working with federal and state partners in developing the Sonoran Desert Conservation Plan; a plan that transcends jurisdictional boundaries and deal with ecosystems at the level of whole landscapes and watersheds. As a consequence, the Board of Supervisors adopted mitigation requirements for certain isolated disturbances to ecosystems called the Conservation Lands System (CLS) guidelines. An important focus of the CLS was on preserving areas of high biodiversity, such as occurs on the site of the Rosemont Mine and the area north of the Service road.

The attached Figure 1 illustrates these impacts to large land-use reserves. Figure 2 places these impacts on a measurable and understandable scale. It is for this reason we have called for an acre-based mitigation approach. If the Rosemont Mine proposal was governed by the Sonoran Desert Conservation Plan, the amount of mitigation lands required for the proposed area of disturbance identified in the Final EIS would be almost 13,000 acres based on the mitigation ratios associated with the CLS. For this reason, we have steadfastly opposed the mining operations, since Rosemont has neither provided nor acknowledged such a large acre-based mitigation approach. Instead, only 3,300 acres have been offered inside Pima County, and another 1,200 outside it.

The mitigation for the Rosemont Mine is, unfortunately, being considered in silos of regulatory responsibilities. For example, the Arizona Department of Environmental Quality, through federal delegation, regulates impacts to air and water quality; the US Army Corps of Engineers regulates discharge of dredge or fill to Waters of the United States; the US Fish and Wildlife Services and Arizona Game and Fish Department cover certain impacts to flora or fauna; and the US Forest Service regulates surface activities on the Forest. Hence, the regulatory environment consists of a series of often isolated governmental regulatory silos. Such is the unfortunate reality.

Considering the enormous geographic scale of the Rosemont Mine and how it effectively severs biological connection in the northern Santa Rita Mountains, it becomes clear that a more holistic approach to regulation and mitigation of mining activities is necessary. If the impacts were considered in their aggregate, rather than in the present regulatory silos, it is clear that significant land conservation is necessary to offset the regional scale impacts of the Rosemont Mine.

CHH/anc

Attachments

- c: Jim Upchurch, Forest Supervisor, Coronado National Forest
Colonel Kimberly Colloton, Los Angeles District Engineer, US Army Corps of Engineers
Jared Blumenfeld, Region IX Administrator, US Environmental Protection Agency
Henry Darwin, Director, Arizona Department of Environmental Quality
Larry Voyles, Director, Arizona Game and Fish Department

Impacts of the Rosemont Mine and Management Area 16 on the Integrity of the Northern Santa Rita Mountains for Wildlife

January 16, 2014

Brian Powell

Julia Fonseca

Pima County Office of Sustainability and Conservation

Summary

The proposed Rosemont Mine is located near to the north end of the Santa Rita Mountains. Its position on the landscape and in geographic relationship with other areas of the Coronado National Forest within the Santa Rita Mountains raise additional concerns for the mine's impacts on wildlife populations, which have not been fully analyzed. Further, the Forest Service's proposal to designate a new management area (known as Management Area 16) that surrounds the footprint of the Preferred Alternative could open the site to additional mine-related development that would further isolate the north portion of the Forest for wildlife and put the inter-mountain movement of some species at risk. This report looks at the results of the Barrel Alternative and designation of Management Area 16 on wildlife movement into and

out of this isolated area north of the mine. The report also highlights the threats that these actions will have on Pima County's conservation investments in the Cienega Valley.



Figure 1. Southeastern Arizona is at the confluence of 4 major biogeographic provinces of North America, which is a key reason for its high biodiversity. Image from the Sky Islands Alliance.

Landscape Fragmentation and Connectivity in the Sky Island Region

Pima County is blessed with being at the heart of one of the most biologically diverse areas of North America. Two main factors are responsible for this biodiversity. First, the County is located at the crossroads of four major biogeographic provinces (i.e., areas with similar plants and animals) of North America, where influences from the Rocky Mountains, Sierra Madre, and the Sonoran, Chihuahuan, and Mojave deserts come together (Fig. 1). The second main factor is the elevational gradients of our area, from low-elevation deserts to mountains peaks. In southern Arizona and far western New Mexico, this area is known as the Sky Islands: forested ranges separated by vast expanses of desert and grassland plains.

The region's principal Sky Islands are, from west to east: Santa Catalina, Santa Rita, Rincon, Huachuca, Galiuro, Pinaleño, and Chiricahua mountains (Fig. 2). Historically, many of the region's animals and plants would move unimpeded among these and other mountain ranges by way of the valleys that separate them. All animals move across the landscape to acquire the resources necessary for survival: food, water, protective cover, and mates. Species such as mountain lions, black bears, and deer can roam over vast expanses, whereas smaller animals such as lizards, frogs, and rodents move across much smaller areas.

The last 150 years or so of human population growth and infrastructure has fragmented the region's landscape (Fig. 3), which has had consequences for wildlife species and the habitats on which they depend. Where once species roamed freely, habitats have been divided into smaller, disconnected areas by roads, urbanization, and other barriers. Habitat loss and fragmentation is the leading cause of decline of most species.

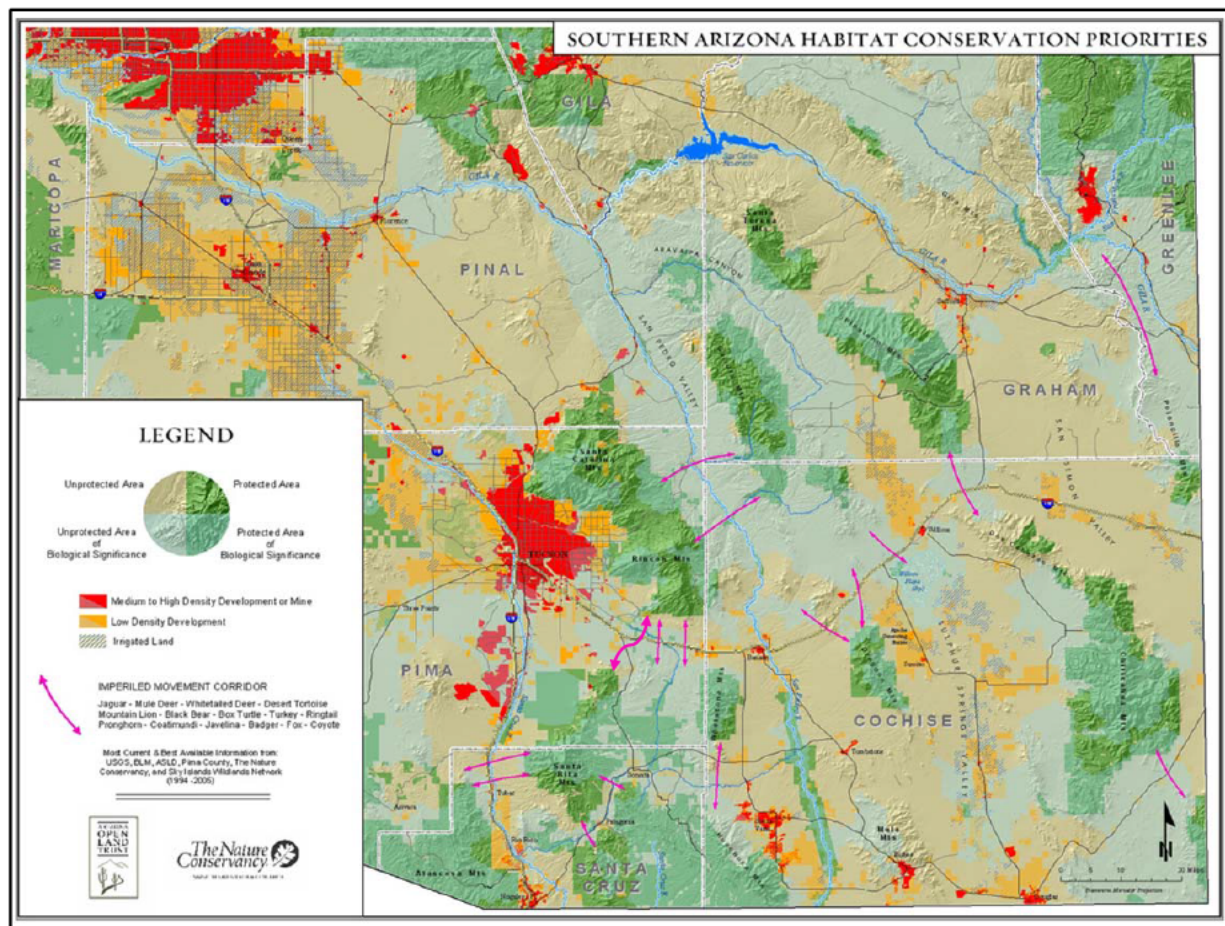


Figure 2. The Sky Island Region of southeastern Arizona showing major linkages among ranges. Note the importance of the Santa Rita Mountains for maintaining connection to the Rincon, Santa Catalina, and onto the Galiuro mountains. Primary figure from Arizona Land and Water Trust and the Nature Conservancy of Arizona.

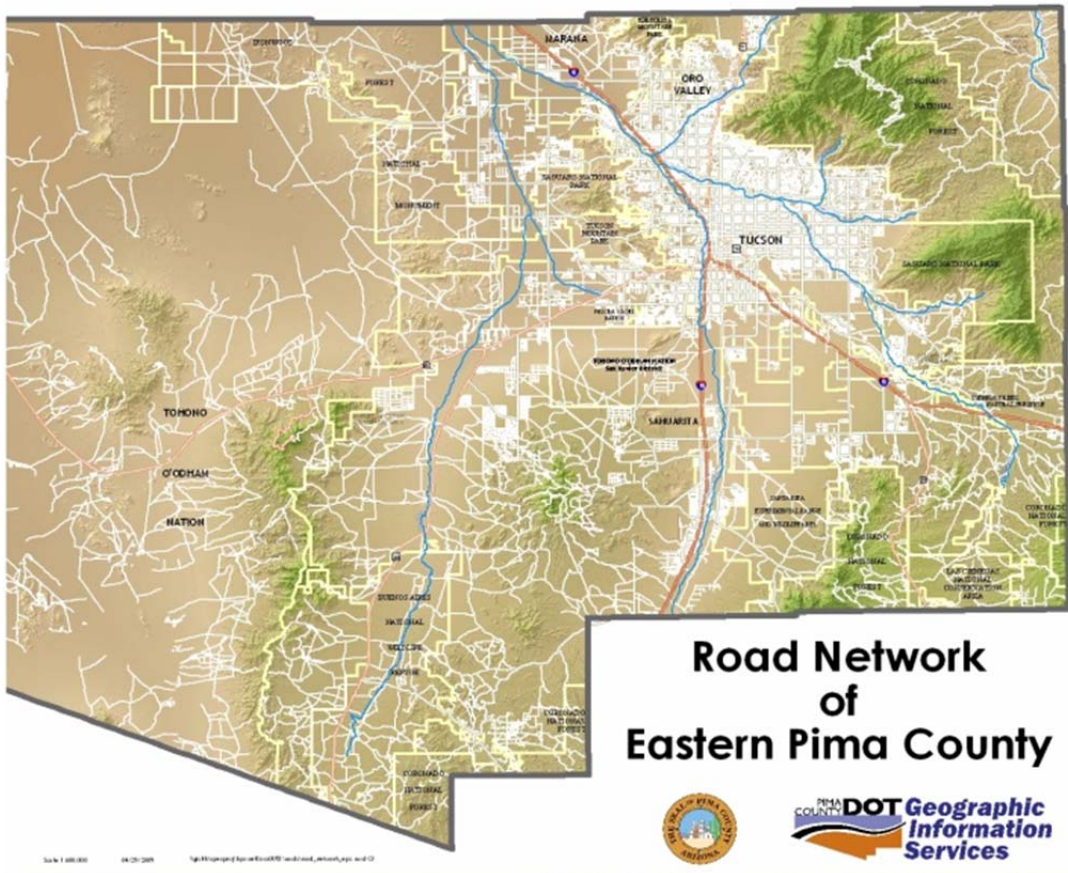


Figure 3. Roads in eastern Pima County. Depending on road traffic use, roads can be a major barrier to animal movement

The loss of biodiversity due to habitat loss and fragmentation in Pima County has long been recognized and plans are being development and carried out to mitigate for these impacts. Most notable among them is the Sonoran Desert Conservation Plan (SDCP), which incorporates a biological goal related to protection of biodiversity:

To ensure the long-term survival of the full spectrum of plants and animals that are indigenous to Pima County through maintaining or improving the habitat conditions and ecosystem functions necessary for their survival.

The tools used by the County to advance the SDCP—namely zoning and land acquisition—were developed in large part to complement the existing lands that were protected and/or remain as open space and which provide habitat and facilitate species' movement. In this way, the lands bought and leased by Pima County took into account the needs of species to move across the landscape.

More recently, there have other planning efforts in Pima County that have focused on understanding and protecting wildlife linkages and wildlife corridors in Pima County (Beier et.

al. 2007), including a series of workshops that resulted in the identification of major wildlife corridors in Pima County (Figure 4; Arizona Game and Fish Department 2012). The results show the importance of key areas for wildlife movement, such as the north end of the Santa Rita Mountains.

Impacts of the Rosemont Mine and Management Area 16 on Wildlife Movement and Habitat

The Forest Service's Final Environmental Impact Statement (FEIS) acknowledges—to some degree—that wildlife habitat and movement will be impacted by the Rosemont Mine (Table 129 of the FEIS). However, the Service has not considered the mine and associated infrastructure impacts on the portion of the Santa Rita Ecosystem Management Unit (EMU) north of the mine (Fig. 4). This area, which is approximately 13,000 acres in size, is mostly wild backcountry, with few roads or even human trails, and much of it rugged (U. S. Forest Service 2013b). The most prominent feature of this area is the 6,200 foot Mt. Fagan, but the area also contains grasslands, woodlands, and oak forests as well as a high density of the springs and intermittent streams that undoubtedly sustain important populations of wildlife.

The FEIS contains language related to a new management area (Management Area 16) around the footprint of the Barrel (Preferred) Alternative (Fig. 4). Creation of the Management Area not only makes the Barrel Alternative consistent with the Forest Plan, but it would make it easier to locate future mining activities in an area that is thousands of acres larger than what is needed for the Barrel Alternative. Management Area 16 provisions would deem future mining activities compatible while eliminating the current requirement for maintenance of wildlife habitat (USFS 2013b). Future requests of mining-related activity would most likely originate from one or more of Rosemont's three other patented mining claim resource areas (Fig. 4) and/or expansion of the Rosemont operation being considered in the FEIS. These activities are not just theoretical. In the FEIS (U. S. Forest Service 2013a), Rosemont states their intention to buy out the Forest Service land at Broadtop Butte and do further exploration and development of Broadtop, Copper World and Peach-Elgin. The Forest Service has not analyzed the potential impacts that these combined impacts will have on species or ecosystem functions and services of this isolated area of the Forest to the north.

Because these impacts have not been fully analyzed by the Forest Service, Pima County undertook an analysis using Southwestern ReGAP data for southern Arizona. We chose ReGAP because of its availability and widespread use as a proxy for wildlife habitat (U. S. Geological Survey 2005; Boykin et. al. 2007), which was our focus. Because of the large number of vegetation type classifications, we combined all vegetation types into their dominant community type: Forest/Woodland, Grassland/Desert Scrub, Developed, and Other. We then mapped these results, which are found in Figure 5.

Rosemont Mine Impacts on Wildlife in the Northern Santa Rita Mountains

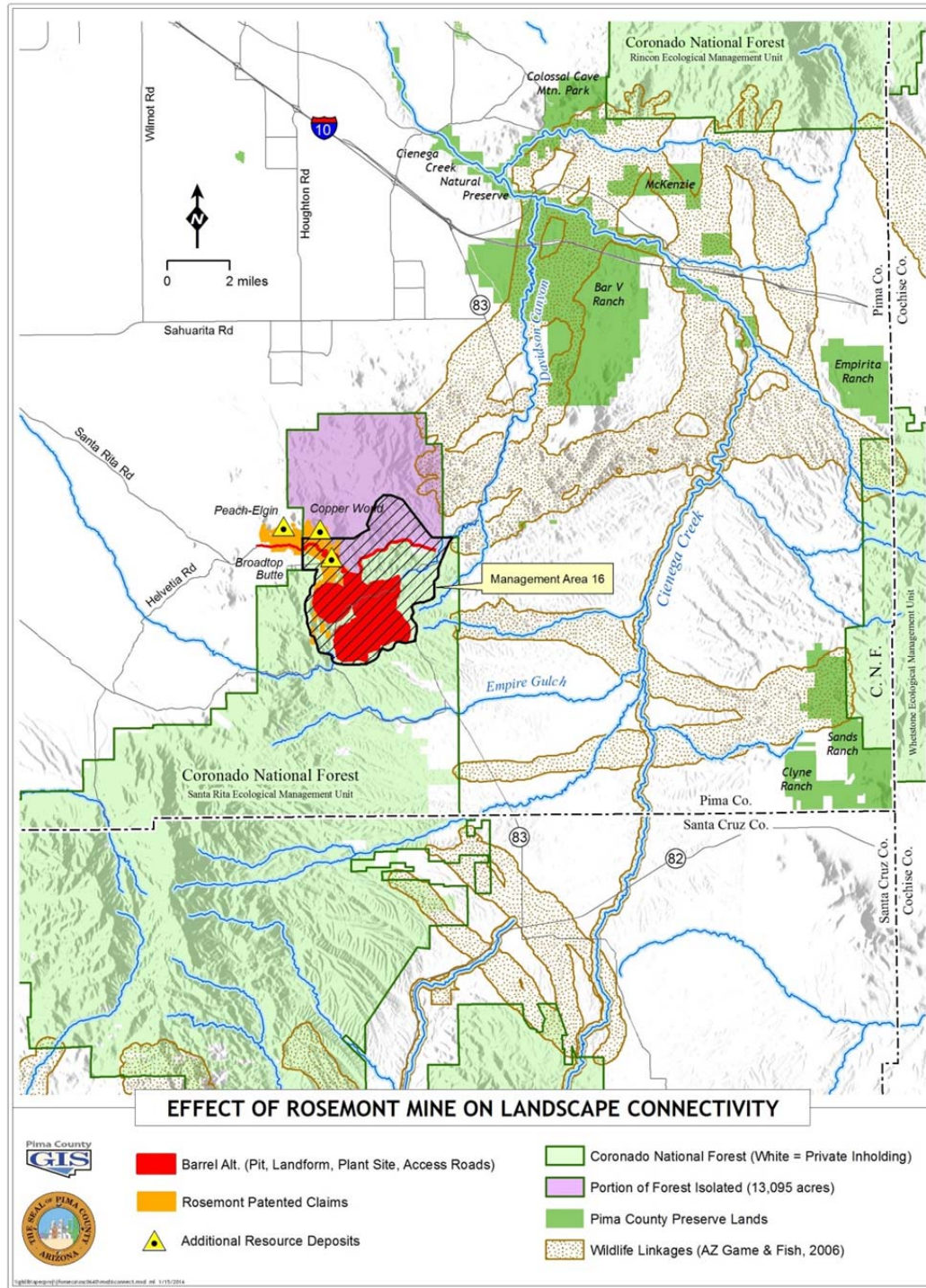


Figure 4. Location of the proposed Rosemont Mine, associated patented mining claims, and Management Area 16 in relationship to wildlife linkages and the rest of the Coronado National Forest's Santa Rita Ecosystem Management Area. Activities associated with these mining activities have not been analyzed as they relate to wildlife populations in the portion of the Coronado National Forest that will be isolated (purple) or on the effects of wildlife movement (via linkages) among the Whetstone, Santa Rita, and Rincon mountains.

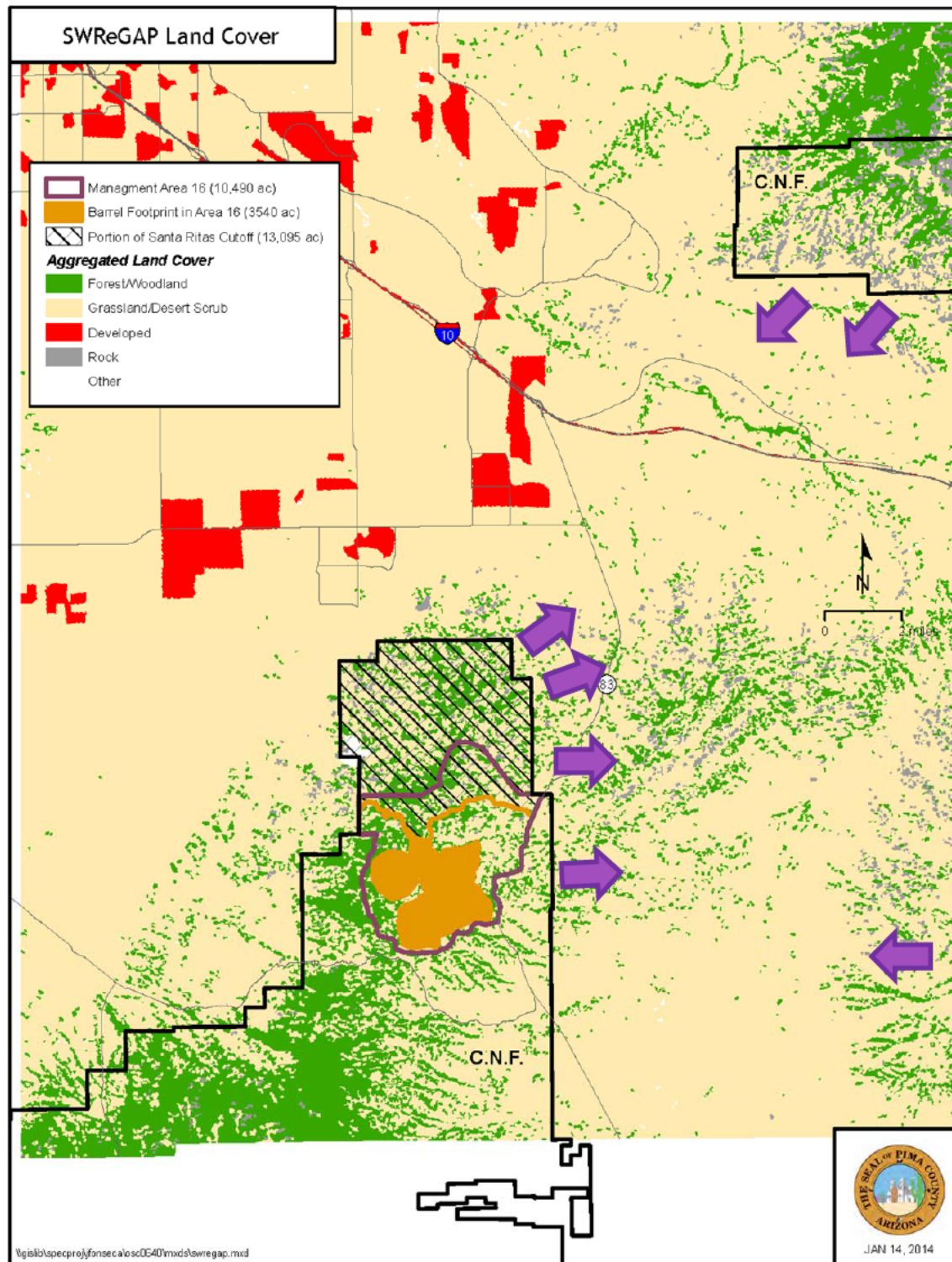


Figure 5. Land cover, by major vegetation community type, showing the similarity between the areas of the Coronado National Forest (C.N.F.) south and north of the proposed Rosemont Mine. This will impact wildlife populations north of the mine and Management Area 16 and potentially affect wildlife movement to and from the Rincon Mountains. These factors were not considered in the Final Environmental Impact Statement.

This figure shows the similarity of the major vegetation types between areas south of the mine (and Management Area 16) and the isolated area to the north. We can then infer, with a reasonable amount of confidence, that the current situation is one of similarity of dominant vegetation communities equating to a robust exchange of individuals and populations in this area. However, if the mine begins operation, this northern area will become isolated from the habitat to the south, thereby slowing or shutting down this exchange. This can lead to all types of problems for these wildlife communities, such as loss of fitness and population declines (Rapport et. al. 1998). These and other factors have not been analyzed in the FEIS. Should additional actions occur in Management Area 16, this will further the loss and fragmentation of habitat in the area.

Impacts to wildlife populations will likely not be restricted to this large area at the northern end of the Santa Rita EMU. For dozens of highly mobile, terrestrial species such as mountain lion, bobcat, deer, and javelina, the loss of access to those northern lands could jeopardize their ability to utilize wildlife corridors (see Fig. 4). This is because the area of the Forest north of the mine and Management Area 16 likely plays an oversize role in facilitating movement of species between the Santa Rita Mountains and the Rincon/Catalina mountain complex to the north. The pockets of woodland and desert scrub would help facilitate these movements (see Fig. 5).

A likely place of movement for species that come out of that northern area of the Santa Rita EMU is Bar-V Ranch, which was acquired by Pima County in 2005. A recent investigation by Pima County staff found that there are many potentially wildlife-friendly underpasses under Interstate 10 on the Bar-V Ranch (Powell and Fonseca 2013, unpublished data; Fig. 6). These concrete underpasses, along with the areas under bridges over Cienega Creek and Davidson

Canyon, provide critical pathways to facilitate movement across the I-10.

Summary

Pima County, through our investments in land and other SDCP elements, has played an active role in mitigating the loss and fragmentation of wildlife habitat in eastern Pima County. A look at our land holding in Figure 4 shows that we own/lease key pieces of land that can help facilitate movement of wildlife among the Santa Rita, Whetstone, and Rincon mountains. We have long recognized the critical



Figure 6. Concrete underpasses such as this one under I-10 at Bar-V Ranch can facilitate movement of wildlife from one side of the highway to the other. Interstate 10 is the single most significant barrier to wildlife movement between the Santa Rita and Rincon mountains, making the presence of these underpasses critical.

role that other land-based conservation partners, in particular the U.S. Forest Service, plays in maintaining the biodiversity of our region and in helping to continue to achieve the SDCP biological goal. Indeed, Pima County plays a key conservation role in Pima County by filling in the missing pieces of the conservation puzzle. The biological, ecological, and social benefits of our land conservation actions are many, but a key role of our acquisitions and set asides is to facilitate movement of terrestrial wildlife among major blocks of protected areas, such as the Forest Service manages.

Pima County takes this linkage role very seriously and we would hope that our conservation partners would adopt the same conservation ethic. Yet the Forest Service's decision to move forward with approving the Rosemont Mine, designate Management Area 16, and not look at the broader implications of these actions on their own lands and on the regional linkage network, is cause for concern. These actions diminish Pima County's investment in the Cienega watershed.

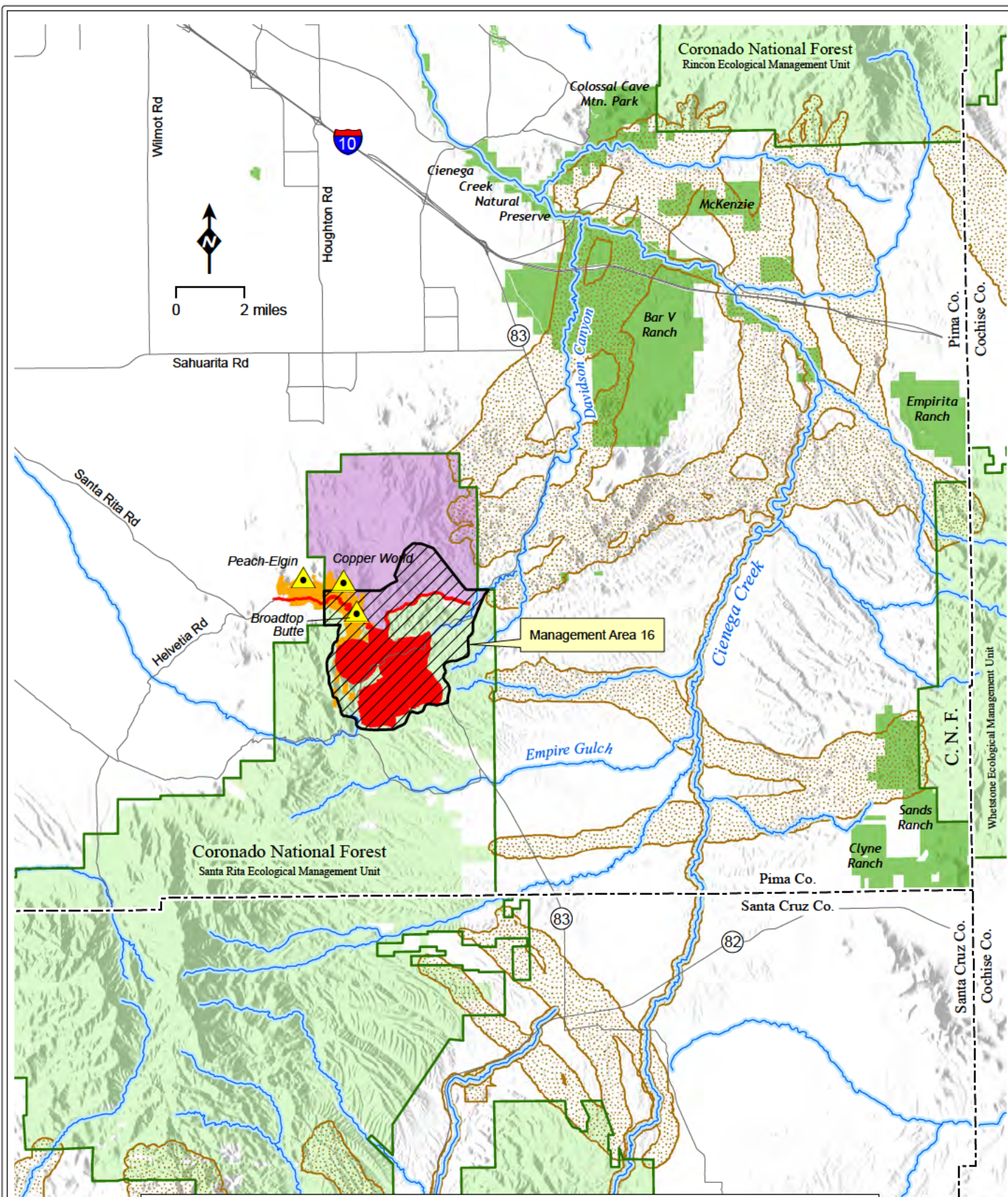
Acknowledgements

Mike List (Pima County IT) produced Figure 2, 4, and 5.

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FIGURE 1



EFFECT OF ROSEMONT MINE ON LANDSCAPE CONNECTIVITY



- Barrel Alt. (Pit, Landform, Plant Site, Access Roads)
- Rosemont Patented Claims
- Additional Resource Deposits

- Coronado National Forest (White = Private Inholding)
- Portion of Forest Isolated (13,095 acres)
- Pima County Preserve Lands
- Wildlife Linkages (AZ Game & Fish, 2006)

FIGURE 2

COMPARISON OF SANTA RITA MOUNTAINS ISOLATE WITH TUCSON AREA FEATURES

